

**REPORT OF VISIT TO PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY**

**BY NIH CHOLERA ADVISORY COMMITTEE, JANUARY, 1962**

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## I INTRODUCTION

1 The Pakistan-SEATO Cholera Research Laboratory (CRL) in Dacca has developed considerably during the past year, both as regards its staff and its scientific accomplishments.

II Dr. Fred L. Soper, one of the world's renowned public health experts, recently retired from the Directorship of the Pan American Sanitary Bureau, assumed the Directorship of the Cholera Research Laboratory in February, 1961. Through his efforts, the administrative procedures and the administrative staff have been put on a working basis. During the year a revised agreement between the Government of Pakistan and the United States has been negotiated in order to facilitate the research effort. Among other things, this provides greater autonomy for the CRL and gives it a Directing Council and a Technical Advisory Committee.

III A new Section on Clinical Research has been established with Dr. Robert S. Gordon, one of the senior investigators of the NIH, in charge. Assisting him is another USPHS officer, Dr. O. Ross McIntyre. These two have created a research laboratory for biochemical and physiological investigations and are in the final stages of establishing a 20 bed ward in which they will study cholera cases in the acute phase of the disease.

IV A functioning water analysis laboratory, with equipment and trained Pakistani technicians, was added to the CRL through the good offices of the Agency for International Development (AID) Mission to Pakistan when the Parsons Company completed its survey of water resources in East

Pakistan for AID. This laboratory has already proved to be a considerable asset in the field studies on cholera.

Dr. K. A. Monsur, the Chief of the Bacteriology Section of the CRL, has developed improved techniques for the diagnostic isolation of Vibrio cholerae, the cause of the disease. Of greatest interest is his maintenance media used in transporting specimens. The usually fragile vibrio survives in this media, even when held for weeks. The availability of such a new tool has enabled Dr. Soper and CRL to formulate a plan for the continuing surveillance of cholera in East Pakistan. Thus, samples of the media and swabs for obtaining rectal specimens will be sent to Rural Health Centers and to villages; in the latter they may be placed in the care of the school teacher. When any diarrheal disease appears in the populations under observation, specimens will be obtained by the teacher and sent by ordinary mail to the CRL for bacteriological diagnostic studies.

Increasing interest in CRL in Dacca has been demonstrated by other governments. For instance, the United Kingdom has contributed to the CRL Laboratory equipment in the amount of \$10,000. These funds were utilized for the purchase of laboratory equipment for the physiology laboratory of CRL and for certain equipment for general use by the CRL.

The proceedings of the International Conference on Cholera, held in December, 1960, in Dacca, is now at the printer. This 150-page monograph will make available to scientists throughout the world the most current information on cholera.

## II PROPOSED PLANS FOR IMMEDIATE DEVELOPMENT

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As outlined above, notable progress has been made in completing the agreement which defines the status of CRL as an autonomous unit and in specifying the mechanisms for its financial support. The agreement defines clearly the framework in which the work of the laboratory can progress and provides the basis for its successful operation in the future. Great credit is due to Dr. Soper for his skill and patience in bringing these negotiations to such a happy conclusion.

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With the completion of this agreement it is now possible to move forward to remedy the deficiencies in organization, staffing and program of the laboratory.

### 1. Replacement and augmentation of scientific staff.

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The imminent departure of Dr. Fred L. Soper, to assume responsible duties elsewhere, not only will create a vacancy difficult to fill but also will impose a need for restructuring the senior staffing pattern of CRL. It is vital for the continued development of CRL that a senior scientist or public health expert with broad experience in administration and in international affairs be recruited promptly to serve as Director of CRL.

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It is recommended that the position of Scientific Director be created promptly in CRL. The individual who occupies this position would be responsible to the Director of CRL for all the scientific activities of the laboratory. He would provide general scientific direction to the Chiefs of the Sections of Clinical Investigations, Epidemiology, Bacteriology

and the Sections ~~of~~ Water and Sanitation. At the present stage of development of CRL, one of the Section Chiefs could also serve as Scientific Director. It is recommended that Dr. Robert Gordon, currently Chief of the Section in Clinical Investigations be given the additional responsibility of serving as Scientific Director of CRL.

XII The position of Deputy Director should be retained with responsibilities limited to those of serving for the Director in his absence and of assuming certain administrative activities which are specifically assigned to him by the Director. Dr. Joe Stockard should continue to serve as Deputy Director but this responsibility should not be permitted to interfere with his primary duty as Chief of the Section on Epidemiology.

## 2. The need for a senior bacteriologist:

XIII Because of the departure of Dr. K. A. Monsur from the laboratory to become director of the Institute of Public Health, a serious deficiency has been created. It is imperative that a vigorous search be begun immediately to find a successor to Dr. Monsur. On the success of this search hinges the entire future of CRL.

XIV Because of his knowledgeableness in the field of cholera and because the work of CRL and the Institute of Public Health are complementary, it is recommended that Dr. Monsur be retained as a consultant to CRL with appropriate remuneration. While this is important for the long range program of CRL it is essential that his services be obtained pending the appointment of a full time senior bacteriologist.

### 3. Opening of ward facilities:

XV The present scientific staff of the laboratory is concerned mainly with the clinical aspects of the disease, elucidation of the physiological abnormalities and their treatment. It is essential that operation of the ward be started at an early date so that advantage can be taken of the scientific opportunities that will occur with the beginning of the epidemic that can be expected in the spring. In addition to the prime scientific reason for an early opening of the clinical facility, there are other reasons which make this move important such as the following: provision of a demonstration unit for instruction of Pakistani physicians in scientific therapy of cholera; recruitment of young clinicians into the program; development of a basis for good public relations with Pakistani physicians and health workers; putting into use needed clinical facilities which are standing idle.

XVI For these reasons it is recommended that the ward be opened early in the spring of 1962 even though expedients must be devised for food and laundry services.

### 4. Relationship of CRL to neighboring scientific institutions:

XVII Further development of collaboration between CRL, Dacca Medical College and Mitford Hospital are essential for the scientific growth of the laboratory. This is of particular importance in order to provide effective training for young Pakistanis in the epidemiology and treatment of cholera as well as for the recruitment of clinical and scientific personnel.

The close association, understanding and collaboration now existing between CRL and the Institute of Public Health should be fostered and

XV/11 developed further. This can be accomplished by joint appointments and consultantships, by the provision of facilities and equipment to be used in common, and by carrying out joint scientific programs.

5. Collaboration of CRL with institutions and agencies in other countries:

XIX The associations and collaborative efforts of CRL should be extended beyond its neighboring organizations. They should embrace other interested groups in distant regions including those in the NIH, Jefferson Medical College, NAMRU 2, and the SEATO Medical Research Laboratory, Bangkok.

XX Experience during the past twelve months with cholera in mainland China, Indonesia, Sarawak, Hong Kong and the Philippines emphasizes the need for intensifications of work on all aspects of this disease by individual scientists and by national and international groups. Furthermore, the rolling front of cholera in the Western Pacific demands that CRL assume some of the obligations implied under its SEATO banner. With the latter point in mind it is recommended that as soon as the first meeting of the Directing Council of CRL is completed both Dr. Soper and Dr. Stockard visit a number of the affected and potentially threatened areas. Dr. Soper could profitably spend the interval before completing his duties with CRL in discussions with officials of SEATO Nations regarding participation in international aspects of cholera control. It is also recommended that Dr. Stockard spend a month or so in the Philippines studying the epidemiology of cholera, particularly the mode of spread in this non-endemic area.

## **6. Epidemiological and Vaccine Studies;**

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Epidemiological studies of two general kinds should be started as soon as possible:

(a) Intensive study should be undertaken of a population in a defined area with the primary aim of determining the effectiveness of cholera vaccines and secondary aims such as the relationship of nutritional status to pathogenesis. This study should be set up in an accessible area such as the Health District at Masinpur where a Health Center has just been established. To be fully effective studies of cholera should be coordinated with other studies or surveys to be carried out by the Pakistan Government either by itself or in collaboration with official agencies such as AID or private agencies such as the Population Council. These studies should include an intensive nutritional survey in a population group of approximately 50,000 persons as well as a sanitary survey. Of fundamental importance to the success of all of these studies is an accurate census and demographic analysis of the population of the Health District.

(b) Study of the persistence of cholera vibrio in a highly endemic area. This study should be directed toward both overt cases and inapparent infections or carriers and to the presence of the vibrio in the environment. Its purpose would be to determine how the vibrio is maintained in a population between epidemics.

Because of the extensive efforts involved in accumulating necessary information on a population group before studies of the type mentioned in (a) can be undertaken profitably, it is recommended that initial

epidemiological efforts be concentrated in the intensive survey. When the mechanisms for this are operative, then attention can be concentrated on the area and population which can be studied for persistence of vibrio cholerae. It is the consensus of the visiting group that the same site will not be suitable for both types of epidemiologic study.

### III BROAD POLICY RECOMMENDATIONS

The committee has concerned itself primarily with technical and administrative matters that bear directly on CRL and are pertinent for the immediate future. At this point, however, it feels constrained to comment on long range objectives that should be brought to the attention of the Directing Council, the Staff of the Laboratory and the Supporting Groups, and hopefully will become incorporated into the philosophy of CRL.

1. It is the opinion of the Committee that the problem of cholera is of such broad significance to world health that any activity short of one which brings the techniques of science to bear directly and importantly on the many problems of the disease is shortsighted and inadequate.

2. CRL has already established itself as a key factor in the apparatus that will be required to eradicate the disease. Support for CRL is imperative in obtaining funds, physical facilities and the high level scientific staff it requires to contribute its share to the accomplishment of the enormous tasks ahead.

3. Consequently, it is recommended that the staff of CRL continue their planning with less regard to the funds which have been available up to the present than to the importance of the task they address themselves to.

#### IV SUMMARY

1. CRL has made solid progress during the past year especially in the administrative area. This has resulted in an agreement which defines its status as an autonomous unit, which outlines its program and responsibilities in broad terms and which specifies the mechanisms for its support.

2. With its status clearly defined CRL should proceed forthwith to replace the scientific staff it has lost and to augment it as indicated above; to begin its clinical and epidemiological programs; and to develop in detail its long range program.

This report is based on a visit to Dacca, January 21 to 26, 1962 by Drs. Kenneth Goodner, Colin MacLeod, Joseph E. Smadel and Theodore Woodward, members of the NIH Cholera Advisory Committee, and by Drs. Robert Phillips and James Shannon who served as Consultants. Other members of the Committee, who for one reason or another were unable to participate in this activity, are Drs. A.S. Benenson, William Burrows, James Kingston, and Clifford Pease.

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Kenneth Goodner

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Colin M. MacLeod

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Robert A. Phillips

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James A. Shannon

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Joseph E. Smadel

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